

Banister River Watershed Water Quality Study Public Meeting

Pittsylvania and Halifax Counties

March 20, 2007



WHY ARE WE HERE?

- To protect and improve water quality in the Banister River Watershed
- To explain the TMDL process
- To gather information and public comment
- To encourage participation in the process

1. Banister River Water Quality

Sections of the Banister River Watershed are not Meeting State Water Quality Standards for Recreation

Purpose of standards is the protection of 6 designated uses

Primary Contact Recreation

Aquatic Life

Fishing

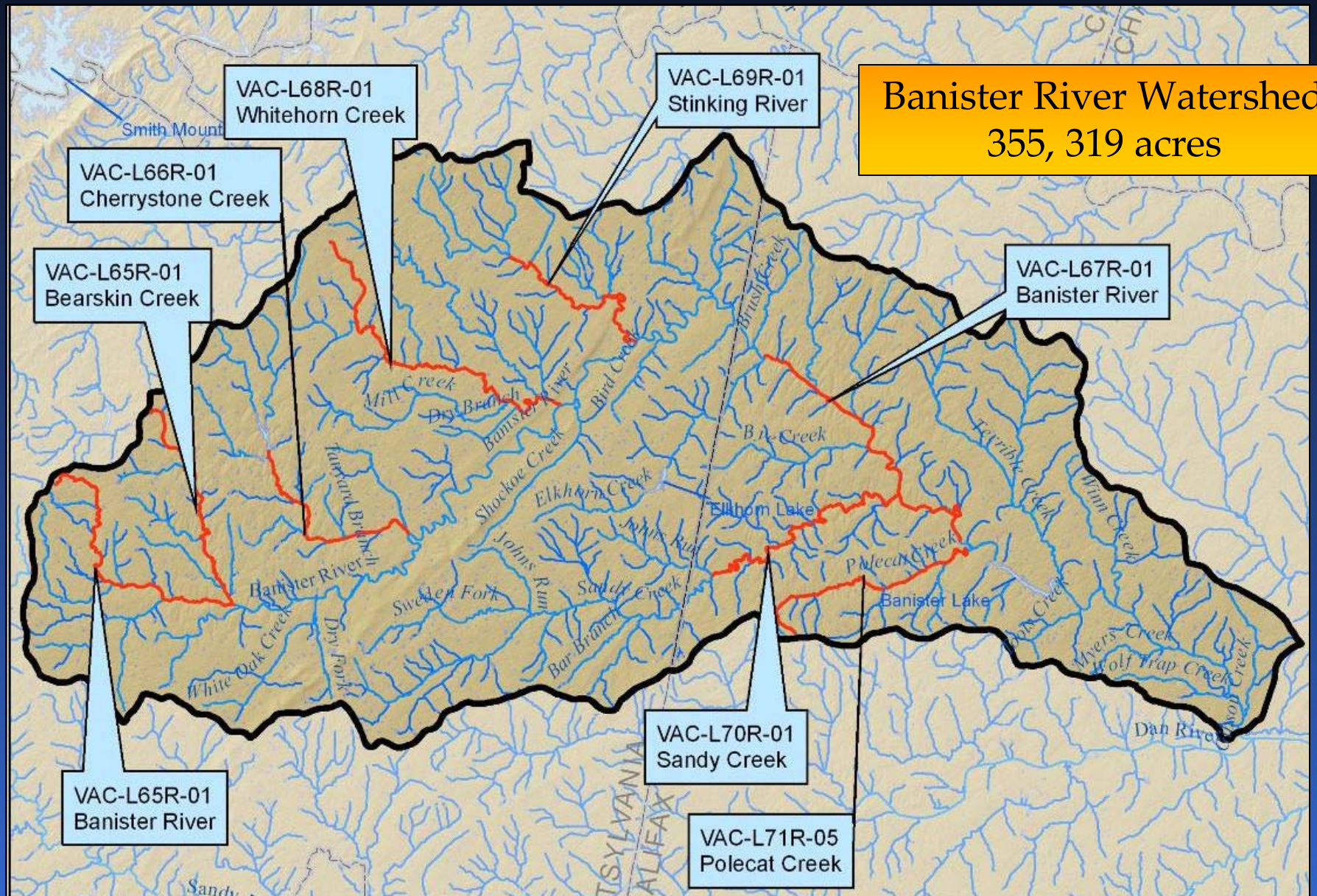
Shellfishing

Drinking Water

Wildlife



1. Banister River Water Quality



1. Banister River Water Quality

WATERSHED	STREAM NAME	MILES	IMPAIRMENT FOR
Banister	Banister River	11.67	Total Fecal Coliform
	Banister River	13.18	<i>E. coli</i>
	Bearskin Creek	9.31	<i>E. coli</i>
	Cherrystone Creek	8.44	Total Fecal Coliform
	Polecat Creek	9.66	Total Fecal Coliform
	Sandy Creek	11.78	Total Fecal Coliform
	Stinking River	8.99	Total Fecal Coliform
	Whitehorn Creek	24.73	<i>E. coli</i>

1. Banister River Water Quality

More than 10.5% of samples collected in these parts of the Banister River watershed are not meeting State Recreation Standards for E.coli and fecal coliforms.

State Standards :
E.coli: **235** counts/100 mL
Fecal Coliform: **400** counts/ 100 mL

*Stream segments are listed as **impaired** if more than 10.5% of samples exceed the water quality standards*

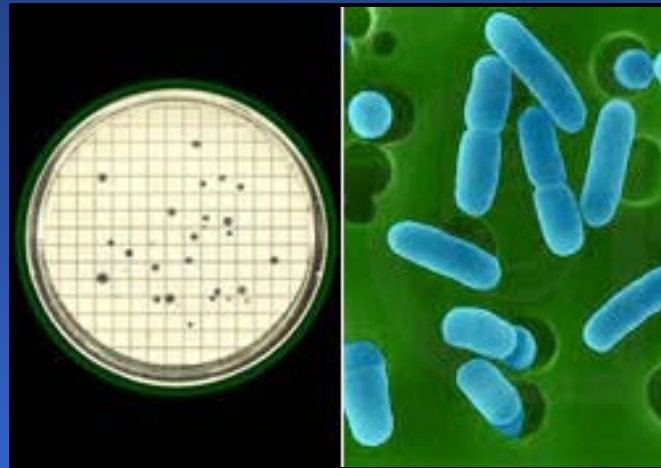
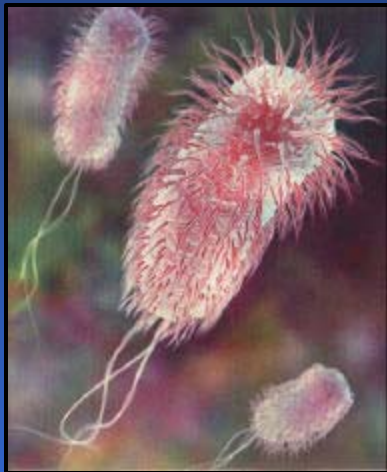
1. Banister River Water Quality

These bacteria indicate a presence of human and animal waste.

(they are found in the intestinal tracts of warm-blooded animals)



Correlation between bacteria concentrations and incidence of gastrointestinal illness



2. Total Maximum Daily Load

Every TWO years, DEQ publishes a list of impaired waters (those not meeting standards)

Virginia is required by law to establish a TMDL for each pollutant causing an impairment**

A TMDL is the amount of a particular pollutant that a stream can receive and still meet Water Quality Standards.

If a stream is meeting its TMDL, there should be no violations of the water quality standards.

** 1972 Clean Water Act (CWA)

** 1997 Water Quality Monitoring Information and Restoration Act

2. Total Maximum Daily Load

In order to do this, we will . . .

1. **Identify all sources of pollution**
(TMDL addresses point and non-point)
2. **Quantify each source**
3. **Develop a model that can calculate reductions needed from each source to attain water quality standards**

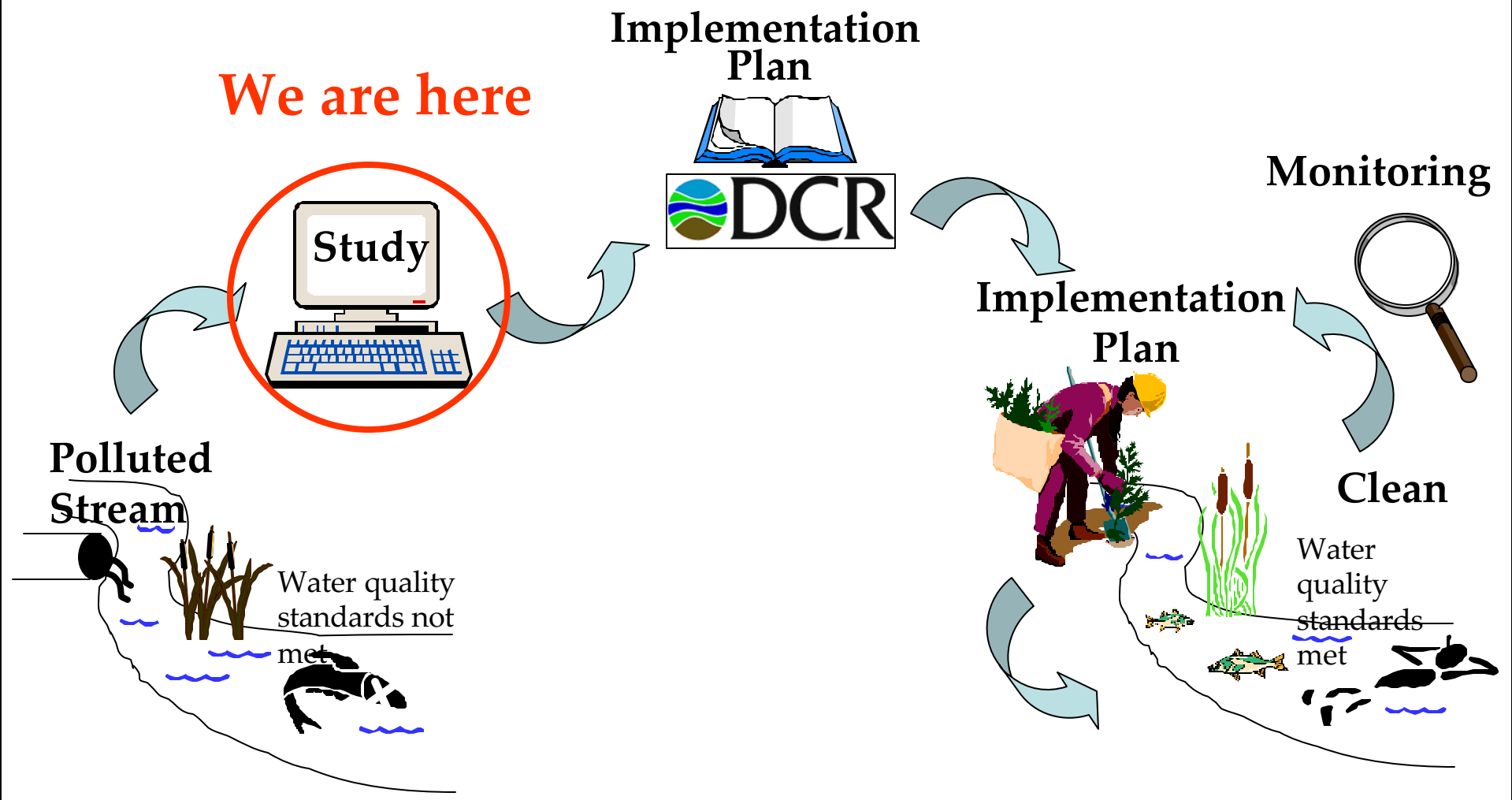


2. Total Maximum Daily Load

- Conduct year-long study and run water quality computer model.
- Form Local Steering Committee *and gather information*
- Public Meetings – 30 day comment period
- Make revisions and submit to the EPA

2. Total Maximum Daily Load

What happens after we develop this TMDL?



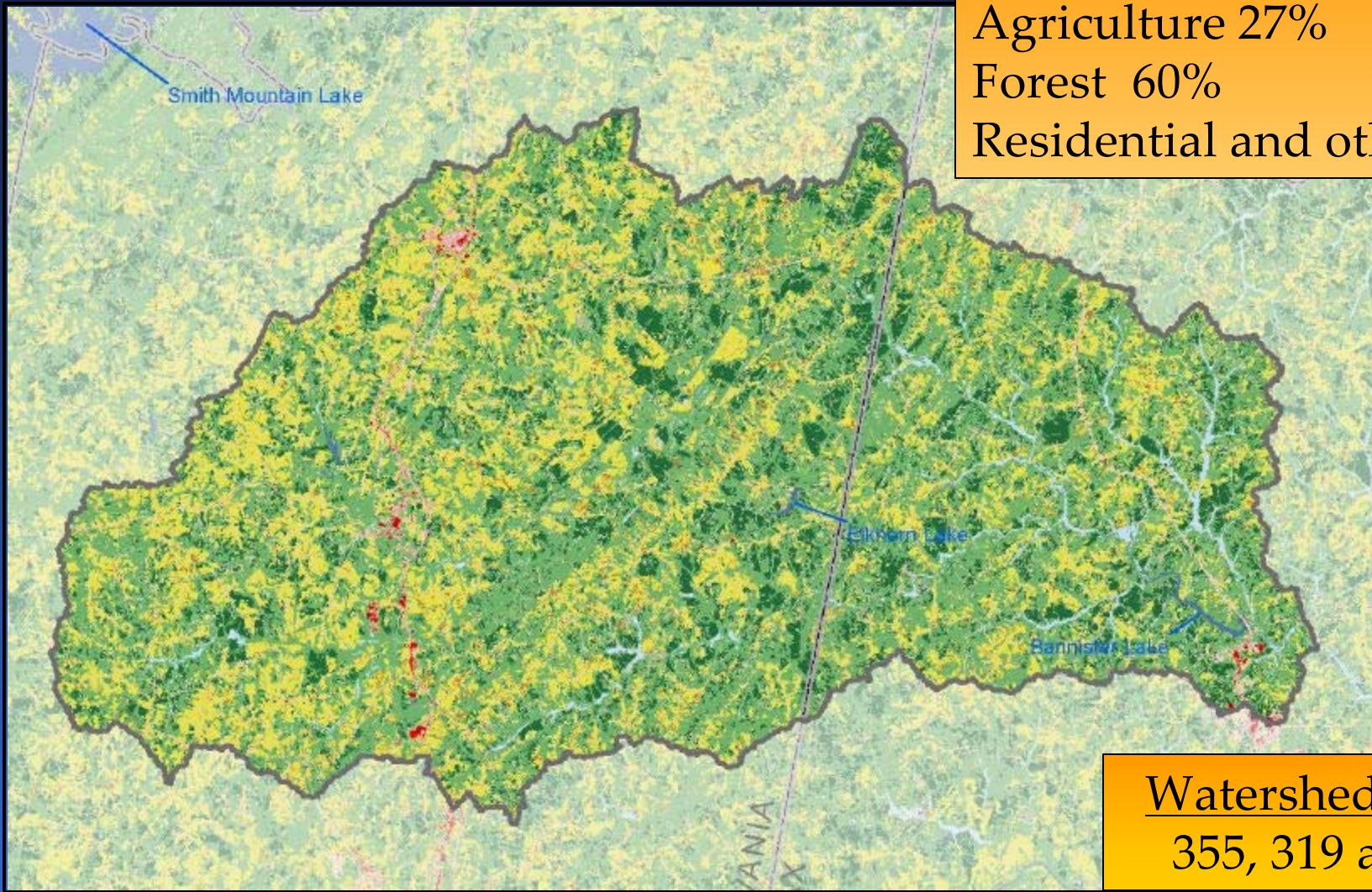
3. Study Results – Land Use

Land Use:

Agriculture 27%

Forest 60%

Residential and other 13%

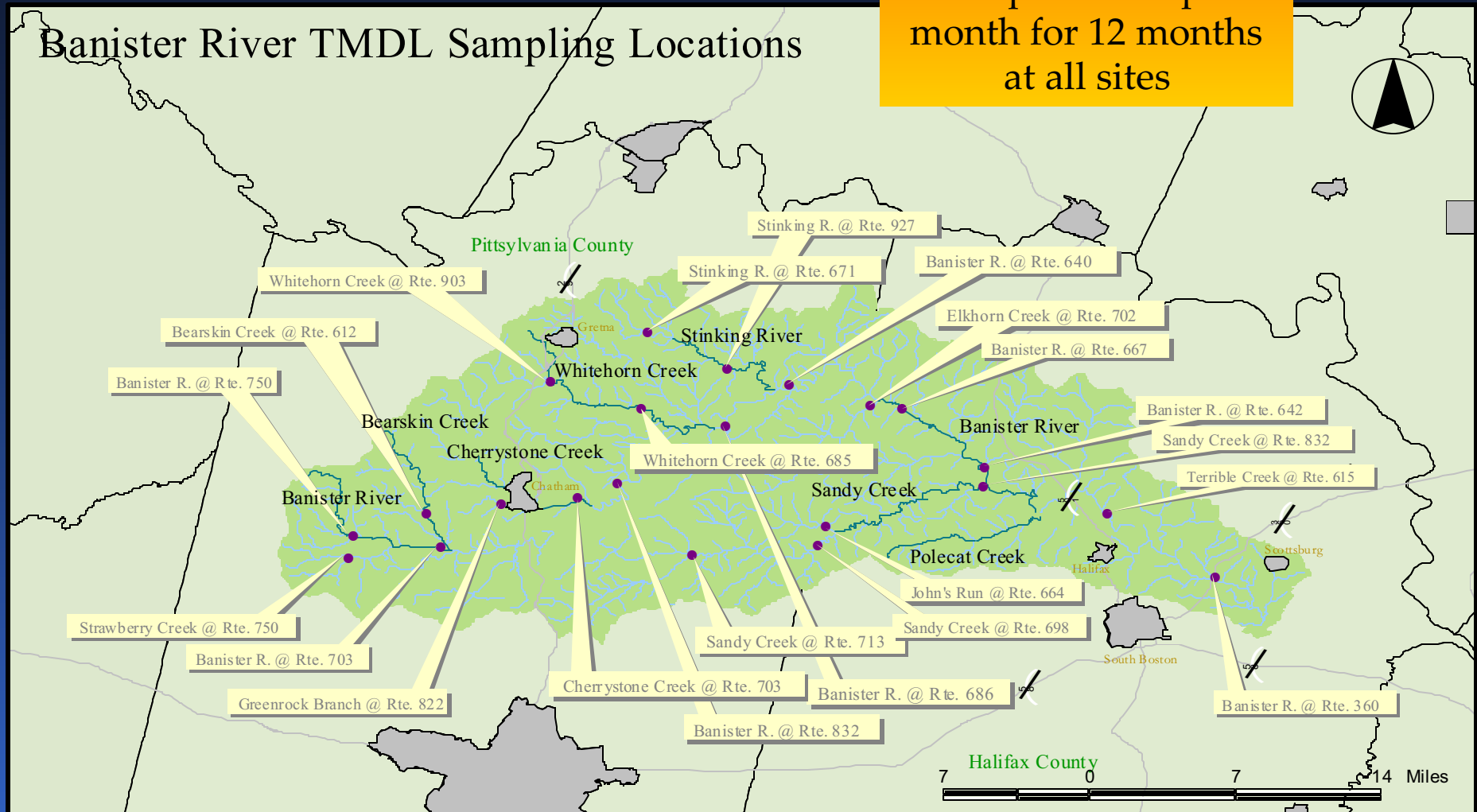


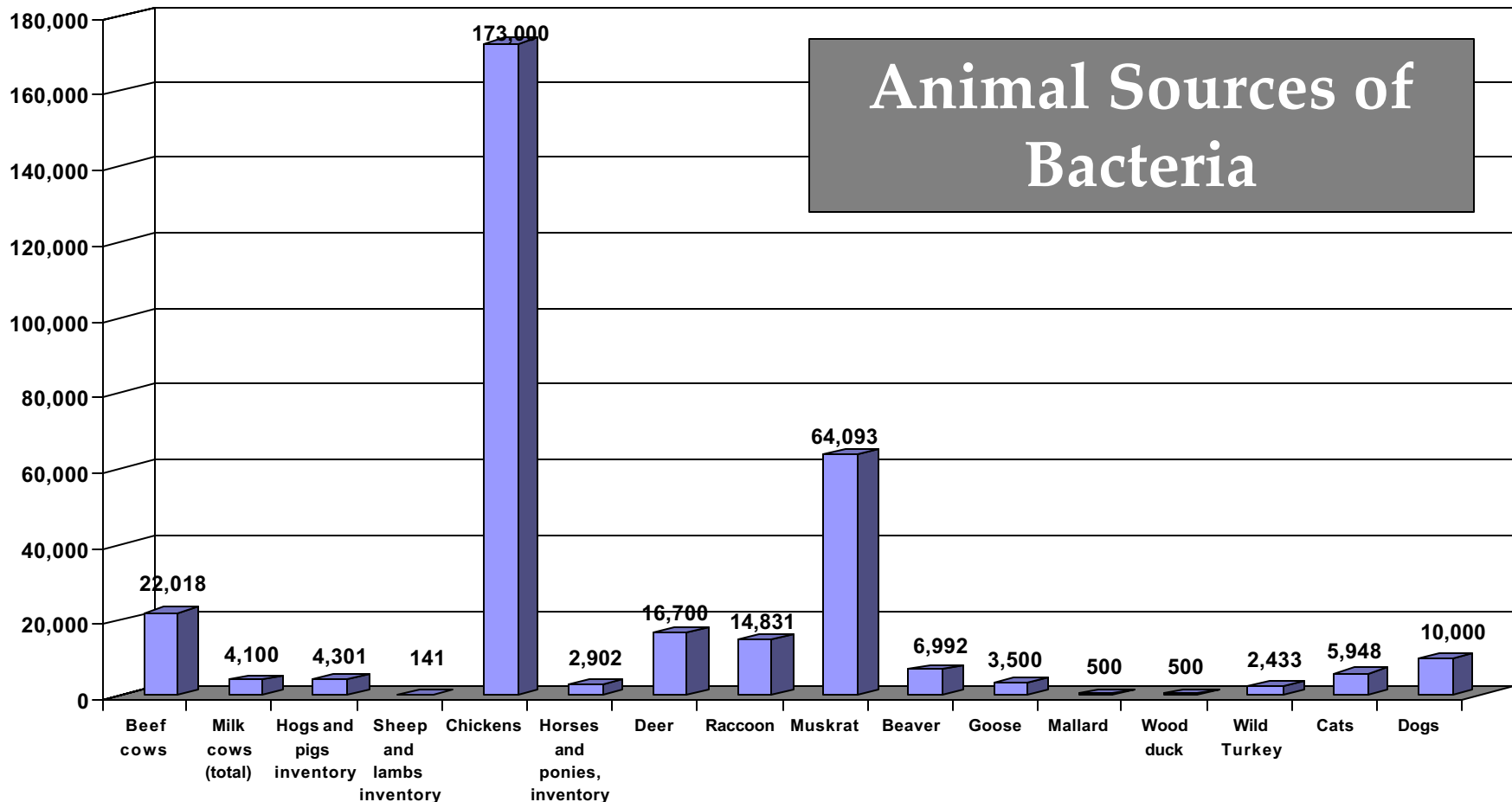
Watershed Size:

355, 319 acres

3. Study Results – Water Quality

Sampled once per month for 12 months at all sites





Human Sources of Bacteria
Failing Septic: 25 households
Straight Pipes: 19 households

Which has the most bacteria in its poop?

Source	The Equivalent Number of Sources to One Beef Cow
Human	16.92
Pet	73.33
Horse	78.57
Beef Cattle	1.00
Dairy-Milked or dry Cow	1.31
Dairy-Heifer	2.85
Sheep	1.22
Deer	95.10
Raccoon	292.04
Muskrat	1,320.00
Beaver	165,000.00
Goose	41.30
Duck	13.58
Mallard	13.58
Wild Turkey	354.84
Hog	3.06
Chicken (Layer)	242.65

3. Study Results

WHERE WE ARE NOW

- Collected information about bacteria sources in the watershed.
- Now using these numbers to build computer model.
- Between now and next meeting, we will use the computer model to . . .
 - determine maximum amount of bacteria that the watershed can handle (i.e. the TMDL)
 - calculate by how much we need to reduce bacteria in order to reach this number

WHAT NEXT?

**Submit your comments by April 20, 2007
to:**

Lauren Theodore
Regional TMDL Coordinator
7705 Timberlake Rd.
Lynchburg, VA 24502
lmtheodore@deq.virginia.gov